

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
30 June 2005 (30.06.2005)

PCT

(10) International Publication Number
WO 2005/058941 A3

(51) International Patent Classification:
C07K 1/00 (2006.01)

(74) Agents: **CELLI, Rosemarie, L. et al.**; Townsend and Townsend and Crew LLP, Two Embarcadero Center, 8th Floor, San Francisco, CA 94111-3834 (US).

(21) International Application Number:
PCT/US2004/044093

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(22) International Filing Date:
17 December 2004 (17.12.2004)

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/530,481 17 December 2003 (17.12.2003) US

(71) Applicants (for all designated States except US): **ELAN PHARMACEUTICALS, INC.** [US/US]; 800 Gateway Boulevard, South San Francisco, CA 94080 (US). **WYETH** [US/US]; Five Girardia Farms, Madison, NJ 07940 (US).

(72) Inventors; and

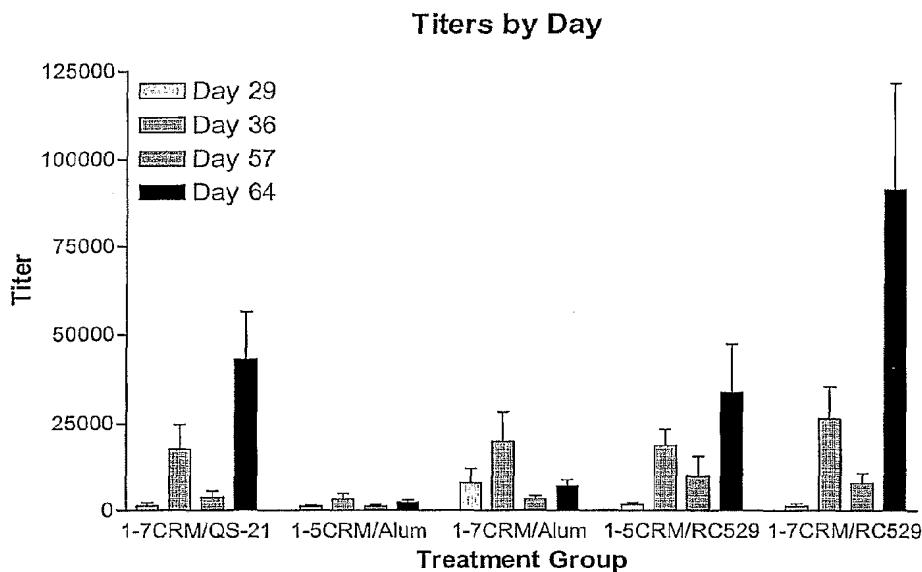
(75) Inventors/Applicants (for US only): **ARUMUGHAM, Rasappa, G.** [US/US]; 102 Barton Lane, Chapel Hill, NC 27516 (US). **PRASAD, A., Krishna** [IN/US]; 105 Worsham Drive, Chapel Hill, NC 27516 (US).

Published:

— with international search report

[Continued on next page]

(54) Title: A_β IMMUNOGENIC PEPTIDE CARRIER CONJUGATES AND METHODS OF PRODUCING SAME



WO 2005/058941 A3

(57) Abstract: The present invention is directed to methods of producing conjugates of A_β peptide immunogens with protein/polypeptide carrier molecules, which are useful as immunogens, wherein peptide immunogens are conjugated to protein carriers via activated functional groups on amino acid residues of the carrier or of the optionally attached linker molecule, and wherein any unconjugated reactive functional groups on amino acid residues are inactivated via capping, thus retaining the immunological functionality of the carrier molecule, but reducing the propensity for undesirable reactions that could render the conjugate less safe or effective. Furthermore, the invention also relates to such immunogenic products and immunogenic compositions containing such immunogenic products made by such methods.



— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(88) Date of publication of the international search report:

1 June 2006

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/44093

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) : C07K 1/00
US CL : 530/402

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
U.S. : 530/402, 403

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
Please See Continuation Sheet

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|---|-----------------------|
| Y | US 2003/0135035 A1 (SHANNON) 17 July 2003 (17.07.2003), see page 22, paragraph [0292]. | 1-379 |
| Y | US 2003/0207828 A1 (ISHIWATA ET AL.) 06 November 2003 (06.11.2003), see page 9, paragraph [0168]. | 1-379 |
| Y | US 2003/0092145 A1 (JIRA ET AL.) 15 May 2003 (15.05.2003), see pages 12-13, paragraph [0101]. | 1-397 |
| Y,P | US 6,962,984 B2 (ISHIWATA ET AL.) 08 November 2005 (08.11.2005), see column 16, lines 14-22. | 1-397 |
| Y | US 5,866,129 (CHANG ET AL.) 02 February 1999 (02.02.1999), see column 5, lines 41-50 and column 6, lines 25-32. | 1-379 |
| Y | US 5,245,015 (FUNG ET AL.) 14 September 1993 (14.09.1993), see column 4-5, for example. | 1-379 |

| | | | |
|--------------------------|---|--------------------------|--|
| <input type="checkbox"/> | Further documents are listed in the continuation of Box C. | <input type="checkbox"/> | See patent family annex. |
| * | Special categories of cited documents: | "T" | later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention |
| "A" | document defining the general state of the art which is not considered to be of particular relevance | "X" | document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone |
| "E" | earlier application or patent published on or after the international filing date | "Y" | document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art |
| "L" | document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) | "&" | document member of the same patent family |

| | |
|---|--|
| Date of the actual completion of the international search | Date of mailing of the international search report |
| 16 March 2006 (16.03.2006) | 16 APR 2006 |
| Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (571) 273-3201 | Authorized officer  B. Dell Chism Telephone No. (571) 272-1600 |

INTERNATIONAL SEARCH REPORT

| |
|---|
| International application No. PCT/US04/44093 |
|---|

Continuation of B. FIELDS SEARCHED Item 3:
STN USPATFULL PCTFULL MEDLINE BIOSIS
search terms: immunogen, conjugate, antigen, albumin, ovalbumin, padre, klh, epitope